



PRELIMINARY

SOLID STATE DEVICES, INC

14849 Firestone Boulevard · La Mirada, CA 90638
 Phone: (714) 670-SSDI (7734) · Fax: (714) 522-7424

SFF9140/3

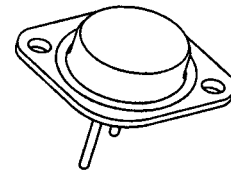
Designer's Data Sheet

FEATURES:

- Rugged construction with poly silicon gate
- Low RDS(on) and high transconductance
- Excellent high temperature stability
- Very fast switching speed
- Fast recovery and superior dv/dt performance
- Increased reverse energy capability
- Low input and transfer capacitance for easy paralleling
- Hermetically sealed
- TX, TXV and Space Level Screening available
- Replaces: IRF9140 Types

**-18 AMP
 -100 VOLTS
 0.20Ω
 P-CHANNEL
 POWER MOSFET**

TO-3

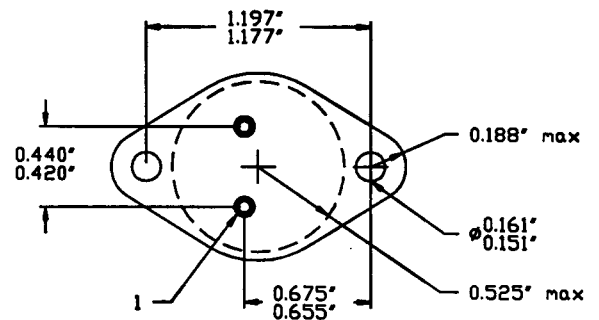
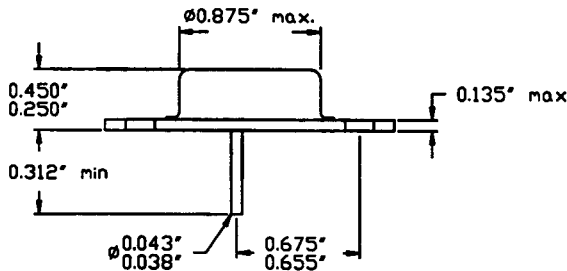


MAXIMUM RATINGS

CHARACTERISTIC	SYMBOL	VALUE	UNIT
Drain to Source Voltage	V _{DS}	-100	Volts
Gate to Source Voltage	V _{GS}	±20	Volts
Continuous Drain Current	I _D	18 11	Amps
		@TC=25°C @TC=100°C	
Operating and Storage Temperature	T _{OP} & T _{STG}	-55 to +150	°C
Thermal Resistance, Junction to Case	R _{θJC}	1.0	°C/W
Total Device Dissipation @ TC=25°C	P _D	125	Watts
Total Device Dissipation @ TC=55°C		95	
Single Pulse Avalanche Energy	E _{AS}	500	mJ
Repetitive Avalanche Energy	E _{AR}	12.5	mJ

PACKAGE OUTLINE: TO-3

PIN OUT:
 PIN 1: SOURCE
 PIN 2: GATE
 CASE: DRAIN



NOTE: All specifications are subject to change without notification. SCD's for these devices should be reviewed by SSDI prior to release.

DATA SHEET #: FP0021 B

MED

SFF9140/3

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ELECTRICAL CHARACTERISTICS @ T_J=25°C (Unless Otherwise Specified)

RATING	SYMBOL	MIN	TYP	MAX	UNIT
Drain to Source Breakdown Voltage (V _{GS} =0 V, I _D = 1mA)	BV _{DSS}	-100	---	---	V
Drain to Source on State Resistance (V _{GS} = -10 V) ID=11A ID=18A	R _{DS(on)}	---	0.15 ---	0.20 0.23	Ω
Temperature Coefficient of Breakdown Voltage	$\frac{\Delta BV_{DSS}}{\Delta T_j}$	---	-0.087	---	A*
Gate Threshold Voltage (V _{DS} =V _{GS} , I _D = -250μA)	V _{GS(th)}	-2.0	---	-4.0	V
Forward Transconductance (V _{DS} ≥ 15v, I _{DS} =11A)	g _{fs}	6.2	8	---	S(V)
Zero Gate Voltage Drain Current (V _{DS} =80% rated voltage, V _{GS} =0 V) (V _{DS} =80% rated V _{DS} , V _{GS} =0 V, T _A =125°C)	I _{DSS}	---	---	25 250	μA
Gate to Source Leakage Forward Gate to Source Leakage Reverse	I _{GSS}	---	---	-100 100	nA
Total Gate Charge Gate to Source Charge Gate to Drain Charge	Q _g Q _{gs} Q _{gd}	31 ---	50 3 25	70 13 45	nC
Turn on Delay Time Rise Time Turn Off Delay Time Fall Time	t _{d(on)} t _r t _{d(off)} t _f	---	15 8 35 20	35 85 85 65	nsec
Diode Forward Voltage (I _S =rated I _D , V _{GS} =0 V, T _J =25°C)	V _{SD}	---	---	-4.2	V
Diode Reverse Recovery Time Reverse Recovery Charge	t _{rr} Q _{RR}	---	170 ---	280 3.6	nsec μC
Input Capacitance Output Capacitance Reverse Transfer Capacitance	C _{iss} C _{oss} C _{rss}	---	1400 600 200	---	pF

SAFE OPERATING AREA (S.O.A.)
 T_C = 25°C, D.C. CONDITION

